

CLAIMS

[1] A polyacetal resin composition comprising:

(A) 100 parts by mass of polyacetal resin having a generation amount of formaldehyde of not more than 100 ppm when heated at a temperature of 200°C for 50 minutes under the nitrogen atmosphere, and

(B) 0.01 to 5 parts by mass of a hydrazide compound.

[2] The polyacetal resin composition according to claim 1, wherein the polyacetal resin (A) is a polyacetal copolymer obtainable through the heat treatment of unstable terminal groups as defined by the following;

<Heat treatment of unstable terminal groups>

the polyacetal copolymer is subjected to heat treatment in a molten state at a temperature in the range of from the melting point of said polyacetal copolymer to 260°C in the presence of at least one quaternary ammonium compound represented by the formula (1) below:

$$[R^1 R^2 R^3 R^4 N^+]_n X^{-n} \quad (1)$$

wherein each of R^1 , R^2 , R^3 and R^4 independently represents an unsubstituted or substituted C_1 - C_{30} alkyl group, a C_6 - C_{20} aryl group, an aralkyl group wherein an unsubstituted or substituted C_1 - C_{30} alkyl group is substituted with at least one C_6 - C_{20} aryl group, or an alkylaryl group wherein a C_6 - C_{20} aryl group is substituted with at least one unsubstituted or substituted C_1 - C_{30} alkyl group, wherein said unsubstituted or substituted alkyl group is linear, branched, or cyclic, and said substituted alkyl group has at least one substituent selected from the group consisting of a halogen atom, a hydroxyl group, an aldehyde group, a carboxyl group, an amino group, and an amide group, and wherein at least one hydrogen atom of each of said unsubstituted alkyl group, said aryl group, said aralkyl group, and said alkylaryl group is optionally replaced by a halogen atom; n represents an integer of from 1 to 3; and X represents a hydroxyl group, or an acid residue of a C_1 - C_{20} carboxylic acid, a hydroacid excluding a hydrogen halide, an oxoacid, an inorganic thioacid, or a C_1 - C_{20} organic thioacid; in an amount of from 0.05 to 50 ppm by mass in terms of the amount of the nitrogen ascribed

to the quaternary ammonium compound, based on the total mass of the polyacetal copolymer and the quaternary ammonium compound, wherein the amount of the nitrogen is represented by the formula (2) below:

$$P \times 14/Q \quad (2)$$

wherein P represents the amount (ppm by mass) of the quaternary ammonium compound, based on the total mass of the polyacetal copolymer and the quaternary ammonium compound, 14 is the atomic weight of nitrogen, and Q represents the molecular weight of the quaternary ammonium compound.

[3] The polyacetal resin composition according to claim 1 or 2, wherein the polyacetal resin has a melting point of 155 to 171°C.

[4] The polyacetal resin composition according to any of claims 1 to 3, wherein the polyacetal resin is a polyacetal copolymer polymerized using a complex compound of boron trifluoride and has a concentration of residual fluorine of not more than 13 ppm.

[5] The polyacetal resin composition according to any of claims 1 to 4, wherein the hydrazide compound is represented by the following formula (3):



wherein R^5 represents a C_2-C_{20} hydrocarbon.

[6] The polyacetal resin composition according to any of claims 1 to 5, wherein the hydrazide compound has a melting point of not lower than 160°C.

[7] The polyacetal resin composition according to any of claims 1 to 6, wherein the hydrazide compound (B) is a sebacic di-hydrazide

[8] The polyacetal resin composition according to any of claims 1 to 7, which further comprises, based on 100 parts by mass of polyacetal resin,

(C) 0.1 to 10 parts by mass of at least one selected from the group consisting of an antioxidant, a polymer or a compound containing formaldehyde reactive nitrogen, a catching agent of formic acid, a weathering (light) stabilizer, and a mold release agent (a lubricant);

(D) 0 to 60 parts by mass of at least one selected from the group consisting of a reinforcing material, an electrically conductive material, a thermoplastic resin, and a thermoplastic elastomer; and

(E) 0 to 5 parts by mass of a pigment.

[9] The polyacetal resin composition according to any of claims 1 to 8, which provides an article obtained by molding at a temperature of 200°C, having an emission amount of formaldehyde, measured according to VDA275 method, of not more than 1 mg/kg.

[10] The polyacetal resin composition according to any of claims 1 to 8, which provides an article obtained by molding at a temperature of 240°C having an emission amount of formaldehyde, according to VDA275 method, of not more than 3 mg/kg.

[11] An article obtainable by molding of the polyacetal resin composition according to any of claims 1 to 8, wherein an emission amount of formaldehyde, measured according to VDA275 method, is not more than 1 mg/kg.